

**REMARKS**

Claims 1-30 are pending. By this Amendment, Claims 1, 16 and 30 are amended.

Applicants note that Claims 27-30, which were added by a Supplemental Preliminary Amendment filed on 19 June 2002, are not addressed in the Office Action. A copy of the Supplemental Preliminary Amendment as filed, together with a stamped postcard confirming that the U.S. Patent and Trademark Office received the Supplemental Preliminary Amendment on 19 June 2002, are filed herewith. See M.P.E.P. § 503.

**Claim Rejection - 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph**

In the Office Action, the Examiner rejects Claims 1-9 and 12-24 under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph. Applicants respectfully submit that the amendments to Claims 1 and 16 obviate this rejection. Withdrawal of the rejection of Claims 1-9 and 12-24 under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph is respectfully requested.

**Claim Rejection - 35 U.S.C. § 103(a)**

In the Office Action, the Examiner rejects Claims 1-26 under 35 U.S.C. § 103(a) over EP 870,573 A1 to Komai, *et al.* (Komai) in view of U.S. Patent No. 5,704,765 to Amos, *et al.* (Amos). This rejection is respectfully traversed.

The Examiner asserts that it would have been obvious to a person of ordinary skill in the art at the time of the invention, "to apply the alloying [welding] material of Komai to the rotor of Amos and then machine the part" because "the rotor is an integral part of a generator system" (Komai teaches a welding material for steam generators, heat exchangers of boilers, and so forth, see numbered paragraph [0001]) and because "parts are

traditionally machined after welding in order to finish the parts prior to assembly". These assertions are respectfully traversed.

Komai discloses a welding material for low chromium ferritic heat-resisting steel with high toughness, or in other words a high ability to absorb energy by plastic deformation. This welding material is used in heat exchangers, boilers and steam generators, *i.e.*, devices for generating steam. Rotors and turbines are not components of steam generators. See for example [www.electrosteam.com](http://www.electrosteam.com) and [www.sioux.com](http://www.sioux.com). Thus, Komai is directed to the welding of static structures or elements. Komai fails to disclose or suggest welding dynamic structures or elements, and specifically fails to disclose or suggest a welded rotor, forming a rotor and welding a rotor element, as variously recited in the present claims. This distinction is significant, because the type of static components which form the focus of Komai operate in very different environments than rotors, and experience very different physical loads. In contrast, the claimed invention addresses problems associated with creep in a turbine rotor. The creep problems addressed by the claimed invention do not exist in Komai's field of technology.

Accordingly, a person of ordinary skill in the art would not have been motivated to contemplate Komai in the first place when considering the manufacture of a rotor, used for example in a turbine.

Amos teaches the welding of a low pressure steam turbine and generator. A ring member of the rotor is welded and made of a low alloy ferrous metal alloy having less than about 6 % alloy ingredients by weight. However, Amos further teaches that the weld metal

includes 9% - 17% chromium. See, for example, the following sections of Amos: the Abstract; the specification at page 2, lines 27-30; and Claim 1. This teaches expressly away from Applicants' presently claimed weld metal composition, and from the weld metal composition disclosed in Komai.

Applicants note that Amos is directed to welding a rotor, while Komai is not; as indicated above, this distinction is significant. The type of static components which form the focus of Komai operate in very different environments than rotors, and experience very different physical loads. Absent a specific teaching to the contrary, the person of ordinary skill in the art would have reasoned that taking Komai's weld metal alloy intended for service in a static structure and using it instead in the dynamic rotor structure of Amos, would compromise essential material properties of the dynamic structure and degrade its dynamic performance. Therefore, a person of ordinary skill in the art at the time of the present invention would have relied on Amos and disregarded Komai when contemplating the challenges of welding a rotor. The Examiner has failed to show motivation that would have caused a person of ordinary skill in the art at the time of the invention, to disregard a teaching in the rotor art (e.g., Amos' high-chromium weld metal alloy) and apply a teaching from a static-structure, non-rotor art (Komai's weld metal alloy) to form a rotor.

In sum, the Examiner has not shown motivation that would have caused a person of ordinary skill in the art at the time of the invention to a) consider Komai, and then b) combine Komai with Amos against the express teaching of Amos to arrive at the presently claimed invention.

For at least the above reasons, Applicants respectfully submit that Komai and Amos, when considered both separately and in combination, fail to disclose or suggest Claims 1-30. Withdrawal of the rejection of Claims 1-26 under 35 U.S.C. § 103(a) over Komai in view of Amos is respectfully requested.

**Conclusion**

Applicants respectfully submit that the application is in condition for allowance. Favorable consideration on the merits and prompt allowance are respectfully requested. In the event any questions arise regarding this communication or the application in general, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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